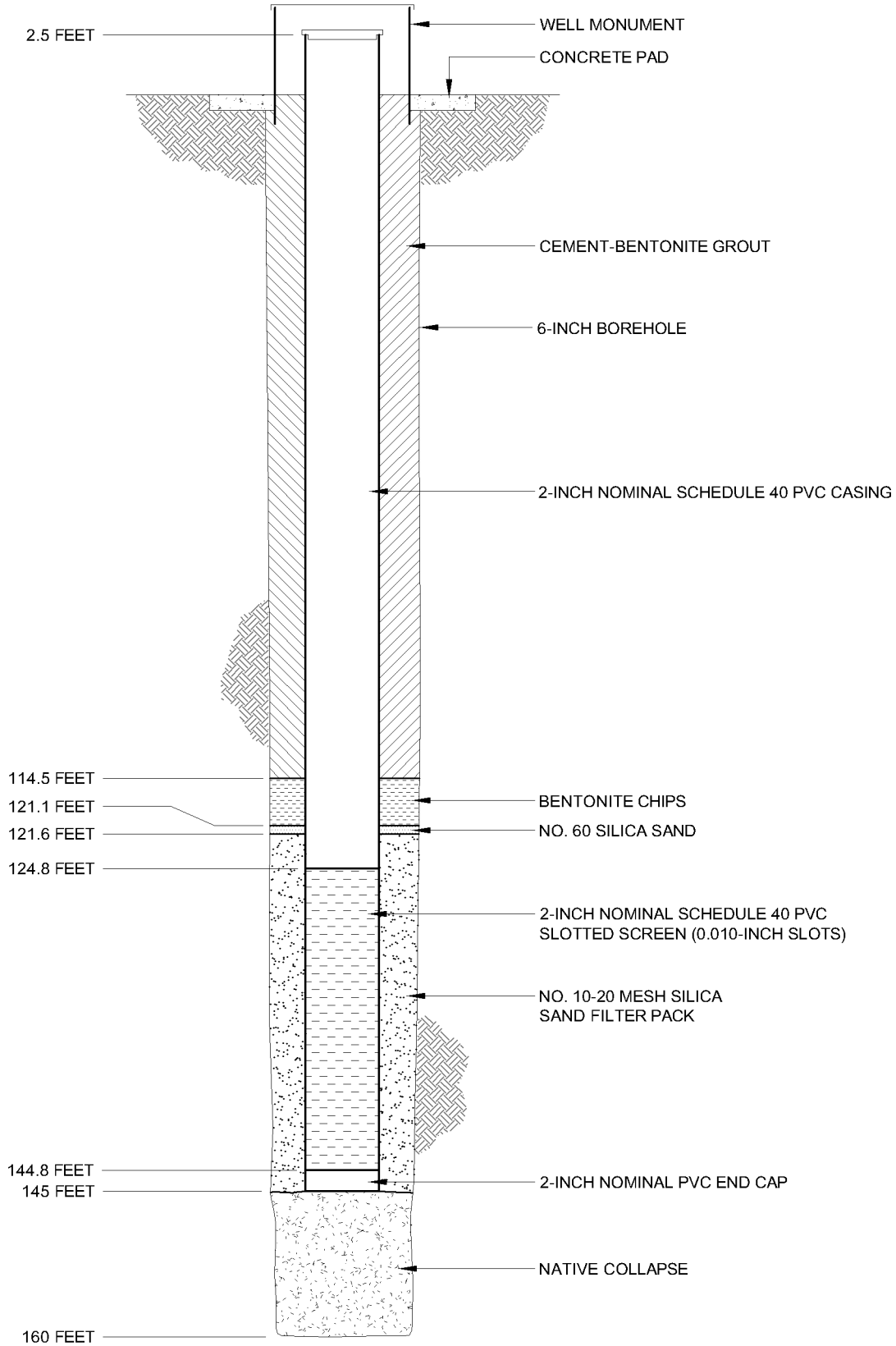

NOT TO SCALE

BROWN AND CALDWELL	Date: March 2008 Atlantic Richfield Company Project: 134557		**Well B/W-2D Construction Details**

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **1** of **13**

Boring Location: **North of mine tailings, along Sunset Hills Dr.**		Elevation: **4348.9 feet amsl**	East: **322542.6** North: **1557979.5**
Drilling Contractor: **WDC**	Driller: **B. Zamow**	Date Started: **9/7/05**	Date Finished: **9/10/05**
Drilling Equipment: **Gus Pech GP24-400RS, Diedrich Sonic Head**		Total Depth: (feet) **160.0**	Water Depth: (feet) **16' / 16.18'**
Sampling Method: **Core Barrel**	Borehole Diameter: **6"**	Well Diameter and Material: **2-inch PVC**	
Drilling Method: **Sonic, utilized 6" casing and a 4.5" core barrel**		Screened Interval and Well Depth: **124.8-144.8 ft., bottom at 145.0 ft.**	
Well Seal: **Bentontite and Cement**		Slot Size: **0.020"**	Filter Material: **#10-20 Silica Sand**
Logged By: **C. Gardner**		Development Method: **Swabbed, bailed, pumped**	

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
		SC	**CLAYEY SAND** (0-1 feet) Dry, loose to medium dense, no odor. Primarily medium to fine sand to ~2 mm with ~25% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, do not react to HCl from land surface to 1 foot, but react strongly from 1 to 4 feet.					Descriptions of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System. Munsell colors described wet. Horizontal survey data is expressed in the Nevada State Plane system, Nevada West zone, in feet. Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line.
	4345							
5		SM	**SILTY SAND** (4-7 feet) Dry, loose, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					All depths are below land surface unless stated otherwise. WELL DESIGN for B/W-2D: Screened Interval: 124.8-144.8 feet. Bottom of sump: 145 feet. Cement Grout: 0-114.5 feet. Bentonite Chips: 114.5-121.1 feet. Filter Pack: #60 Sand 121.1-121.6 feet, #10-20 Sand 121.6-145 feet. Native Collapse: 145-160 feet.
		SW	**WELL-GRADED SAND** (7-10 feet) Dry, loose, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					Depth to Water Measuring Point is Top of PVC Casing. Top of PVC Elevation: 4,351.39 feet, amsl. PVC Stick-up: 2.5 feet above land surface.
	4340							

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **2** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
		SM	**SILTY SAND** (10-13.5 feet) Dry, loose to medium dense, no odor. Primarily medium to fine sand to ~2 mm with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4335	SC	**CLAYEY SAND** (13.5-16 feet) Moist, dense, no odor. Primarily fine sand (<0.5 mm) with ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
15								
		SM	**SILTY SAND** (16-17.25 feet) Saturated, loose, no odor. Primarily coarse to medium sand with ~15% fine sand, ~5% fine gravel to ~7 mm, and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW-SM	**WELL-GRADED SAND with SILT** (17.25-18 feet) Saturated, loose, no odor. Primarily coarse to medium sand with ~15% fine sand, ~5% fine gravel to ~8 mm, and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	**LEAN CLAY** (18-18.75 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 4/3), and do not react to HCl.					
	4330	SP-SM	**POORLY-GRADED SAND with SILT** (18.75-23.75 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to 2 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
20								

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **3** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
	4325	CL	**SANDY LEAN CLAY** (23.75-24.75 feet) Dry to moist, stiff, no odor. Primarily silt and clay with ~40% medium to fine sand and trace coarse sand to ~3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
		SM	**SILTY SAND** (24.75-25 feet) Saturated, loose, no odor. Primarily medium to fine sand with trace coarse sand to ~4 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
25		CL	**SANDY LEAN CLAY** (25-26.5 feet) Moist, no odor. Primarily silt and clay with ~35% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness. Some black organic staining.					
		SC						
		SW-SM/CL	**CLAYEY SAND** (26.5-27 feet) Saturated, loose, no odor. Primarily medium to fine sand to ~1 mm with ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
	4320		**WELL-GRADED SAND with SILT** (27-27.25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~4 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SANDY LEAN CLAY (27.25-30 feet) Moist, hard, no odor. Primarily silt and clay with ~30% medium to fine sand to ~1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
30		SM						
		SM	**SILTY SAND** (30-30.5 feet) Saturated, loose, no odor. Primarily medium to fine sand to ~1 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SILTY SAND (30.5-33 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~1 mm with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW-SM	**WELL-GRADED SAND with SILT** (33-37 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4315							
35								

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **4** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
	4310	SP-SM	**POORLY -GRADED SAND with SILT** (37-41.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
40								
	4305	CL	**LEAN CLAY** (41.5-53.5 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~10% medium to fine sand (<1 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 4/3), and do not react to HCl.					
45								
	4300							

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **5** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
50								
	4295	SM	**SILTY SAND** (53.5-55 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.	B/W-2 @ 52 - 57 Ft.				
55		CL	**SANDY LEAN CLAY** (55-60 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~40% medium to fine sand to ~2 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
	4290							
60		SM	**SILTY SAND** (60-61.5 feet) Moist, medium dense, no odor. Primarily medium to fine sand to ~2 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	**SANDY LEAN CLAY** (61.5-64 feet) Moist, hard, no odor. Primarily silt and clay with ~40% medium to fine sand to ~2 mm. The sand is subangular to subrounded. The fines have					

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **6** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
			medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
	4285							
		CL	**SANDY LEAN CLAY** (55-60 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~35% medium to fine sand to ~2 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are strong brown (7.5YR 4/6), and do not react to HCl.					
65								
		SC	**CLAYEY SAND** (66.5-69 feet) Moist to saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~6 mm and ~40% silt and clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
	4280							
		SM	**SILTY SAND** (69-70 feet) Moist, medium dense, no odor. Primarily medium to fine sand to ~1 mm with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are grayish brown, and do not react to HCl.					
70		CL	**SANDY LEAN CLAY** (70-70.75 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~50% fine sand (<0.5 mm). The sand is subrounded. The fines have medium plasticity and low toughness, are dark grayish brown (10YR 4/2), and do not react to HCl.					
		SC	**CLAYEY SAND** (70.75-71.25 feet) Dry to moist, dense, no odor. Primarily fine sand (<0.5 mm) with ~40% silt and clay. The sand is subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
		SC	**CLAYEY SAND** (70.75-71.25 feet) Dry to moist, dense, no odor. Primarily fine sand (<0.5 mm) with ~40% silt and clay. The sand is subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
	4275							
		SM	**SILTY SAND** (74-74.75 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~10% fine gravel to ~10 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
75		SC	**CLAYEY SAND** (74.75-75.25 feet)					

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **7** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
		CL	Dry to moist, no odor. Primarily fine sand (<0.5 mm) with ~40% silt and clay. The sand is subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.	B/W-2 @ 77 - 82 Ft.				
			LEAN CLAY with SAND (75.25-76.5 feet) Dry to moist, hard, no odor.					
		SC	Primarily silt and clay with ~20% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
			CLAYEY SAND (76.5-77.5 feet)					
		SM	Dry to moist, dense, no odor. Primarily medium to fine sand to 2 mm with ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
		SM	**SILTY SAND** (77.5-78.25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~10% coarse sand to ~3 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4270							
		SW-SM	**SILTY SAND** (77.5-78.25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~5 mm and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
80		CL	**WELL-GRADED SAND with SILT** (79.5-80 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to 3mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SANDY LEAN CLAY (80-82 feet) Saturated, soft, no odor.					
		SM	Primarily silt and clay with ~40% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
		SC	**SILTY SAND** (82-82.5 feet)					
		SM	Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4265							
		SW-SM	**CLAYEY SAND** (82.5-83 feet) Moist, dense, no odor. Primarily medium to fine sand to ~2 mm with ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
85		SM	**SILTY SAND** (83-84 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	**WELL-GRADED SAND with SILT** (84-85 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% coarse sand, ~5% fine gravel to ~15 mm, and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SILTY SAND (85-85.75 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **8** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
	4260		**LEAN CLAY with SAND** (85.75-95 feet) Dry to moist, stiff, no odor. Primarily silt and clay with ~25% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
90								
	4255							
95		SW	**WELL-GRADED SAND** (95-99 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.	B/W-2 @ 95 - 100 Ft.				
	4250							
		SP-SM	**POORLY-GRADED SAND with SILT** (99-101.25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~2 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
100								
		CL	**SANDY LEAN CLAY** (101.25-103.5 feet)					

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **9** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
			Dry to moist, hard, no odor. Primarily silt and clay with ~30% fine sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
	4245	SM	**SILTY SAND** (103.5-104 feet) Saturated, dense, no odor. Primarily medium to fine sand with to ~1 mm with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	**SANDY LEAN CLAY** (104-105 feet) Dry to moist, stiff, no odor. Primarily silt and clay with ~30% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown (10YR 4/3), and do not react to HCl.					
105		SM	**SILTY SAND** (105-105.75 feet) Moist to saturated, medium dense, no odor. Primarily medium to fine sand with to ~1 mm with ~30% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
		CL	**LEAN CLAY with SAND** (105.75-106.5 feet) Moist, stiff, no odor. Primarily silt and clay with ~20% medium to fine sand to ~1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are olive brown (2.5Y 4/4), and do not react to HCl.					
	4240	SM	**SILTY SAND** (106.5-107 feet) Dry to moist, medium dense, no odor. Primarily medium to fine sand to ~1 mm with ~30% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
		CL	**LEAN CLAY** (107-115.5 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~10% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are grayish brown (10YR 5/2), and do not react to HCl.					
110								
	4235							

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **10** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
115				B/W-2 @ 115 - 120 Ft.				
		SW	**WELL-GRADED SAND** (115.5-117 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~8 mm with ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	**SANDY LEAN CLAY** (117-120 feet) Dry to moist, firm to hard, no odor. Primarily silt and clay with ~35% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
	4230							
120		SM	**SILTY SAND** (120-121.75 feet) Dry to moist, medium dense, no odor. Primarily fine sand (<0.5 mm) with ~20% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
		SP-SM	**POORLY -GRADED SAND with SILT** (121.75-123.25 feet) Saturated, medium dense, no odor. Primarily medium to fine sand to ~2 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	**SANDY LEAN CLAY** (123.25-125 feet) Dry to moist, stiff to hard, no odor. Primarily silt and clay with ~35% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
	4225							
125		SM	**SILTY SAND** (125-129 feet) Dry to moist, medium dense, no odor. Primarily fine sand (<0.5 mm) with ~20% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl.					

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **11** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
	4220							
		SW	**WELL-GRADED SAND** (129-134 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~8 mm with ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
130								
	4215							
		SW	**WELL-GRADED SAND** (134-136 feet) Saturated, loose, no odor. Primarily medium to fine sand with ~10% fine gravel to ~8 mm with ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
135								
		SW	**WELL-GRADED SAND** (136-138 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~8 mm with ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.	B/W-2 @ 135 - 140 Ft.				
		SW	**WELL-GRADED SAND** (138-140 feet) Saturated, loose, no odor. Primarily medium to fine sand with ~10% fine gravel to ~8 mm with ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4210							
140								
		SW	**WELL-GRADED SAND** (140-142.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace fine gravel to ~8 mm with ~5% silt and clay. The sand is subangular to					

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **12** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
			subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
		SC	**CLAYEY SAND** (142.5-144 feet) Dry to moist, dense, no odor. Primarily fine sand (<0.5 mm) with ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown (10YR 5/3), and do not react to HCl.					
	4205							
		SM	**SILTY SAND** (144-146 feet) Moist, medium dense, no odor. Primarily fine sand (<0.5 mm) with ~20% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown to reddish brown, and do not react to HCl.					
145								
		SP-SM / SC	**POORLY-GRADED SAND with SILT** (146-146.25 feet) Saturated, dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SP-SM	**CLAYEY SAND** (146.25-146.5 feet) Moist, dense, no odor. Primarily fine sand (<0.5 mm) with ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and medium to low toughness, are brown, and do not react to HCl.					
		SC	**POORLY-GRADED SAND with SILT** (146.5-147.75 feet) Saturated, dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4200	SP-SM / CL	**CLAYEY SAND** (147.75-148.5 feet) Moist, dense, no odor. Primarily fine sand (<0.5 mm) with ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and medium to low toughness, are brown, and do not react to HCl.					
		CL	**POORLY-GRADED SAND with SILT** (148.5-148.75 feet) Saturated, dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
150		CL	**LEAN CLAY with SAND** (148.75-149 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~25% fine sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are grayish brown (10YR 5/2), and do not react to HCl.					
		CL	**SANDY LEAN CLAY** (149-149.75 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~45% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4/3), and do not react to HCl.					
		SP-SM / SW-SM	**SANDY LEAN CLAY** (149.75-150.5 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~35% fine sand (<0.5 mm). The					

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06

BROWN AND CALDWELL

BORING LOG

Project Name: **Yerington Groundwater Investigation** Well Number: **B/W-2**

Soil Boring ☐ Monitoring Well ☒ Project Number: **121243.021** Sheet **13** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Remarks
			sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
			SANDY LEAN CLAY (150.5-152.75 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~45% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
155		SP-SM						
		CL	**POORLY-GRADED SAND with SILT** (152.75-153 feet) Saturated, dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			WELL-GRADED SAND with SILT (153-155 feet) Saturated, dense, no odor. Primarily medium to fine sand to ~2 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SC	**POORLY-GRADED SAND with SILT** (155-155.5 feet) Saturated, dense, no odor. Primarily medium to fine sand to ~1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4190		**SANDY LEAN CLAY** (155.5-157.5 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~40% medium to fine sand to ~1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5/3), and do not react to HCl.					
			CLAYEY SAND (157.5-160 feet) Moist to saturated, dense, no odor. Primarily coarse to medium sand with ~15% fine sand, ~5% fine gravel to ~8 mm, and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
160								